

Patent Claims:

1. Organic electroluminescent device comprising an anode, a cathode and at least one emission layer comprising at least one matrix material which is doped with at least one phosphorescent emitter, characterised in that the emission layer on the anode side is directly adjacent to an electrically conductive layer.
2. Organic electroluminescent device according to Claim 1, characterised in that either the matrix material or the phosphorescent emitter is a low-molecular-weight defined compound having a molecular weight of less than 10,000 g/mol.
3. Organic electroluminescent device according to Claim 2, characterised in that both the matrix material and the phosphorescent emitter are low-molecular-weight defined compounds having a molecular weight of less than 10,000 g/mol.
4. Organic electroluminescent device according to one or more of Claims 1 to 3, characterised in that the electrically conductive layer to which the emission layer on the anode side is adjacent is an organic or organometallic hole-injection layer.
5. Organic electroluminescent device according to one or more of Claims 1 to 3, characterised in that the electrically conductive layer to which the emission layer on the anode side is adjacent is the anode.
6. Organic electroluminescent device according to one or more of Claims 1 to 5, characterised in that it comprises further layers.
7. Organic electroluminescent device according to Claim 6, characterised in that the further layers are one or more hole-blocking layers and/or electron-transport layers and/or electron-injection layers.
8. Organic electroluminescent device according to one or more of Claims 1 to 7, characterised in that the emission layer is directly adjacent to the electron-transport layer without the use of a hole-blocking layer.

9. Organic electroluminescent device according to one or more of Claims 1 to 7, characterised in that the emission layer is directly adjacent to the cathode or the electron-injection layer without the use of a hole-blocking layer and without the use of an electron-transport layer.
10. Organic electroluminescent device according to one or more of Claims 1 to 9, characterised in that more than one emission layer is present.
11. Organic electroluminescent device according to one or more of Claims 1 to 10, characterised in that the emission layer has a layer thickness of 1 to 300 nm.
12. Organic electroluminescent device according to one or more of Claims 1 to 10, characterised in that the phosphorescent emitter present is a compound which contains at least one atom having an atomic number of greater than 36 and less than 84.
13. Organic electroluminescent device according to Claim 12, characterised in that the phosphorescent emitter comprises at least one element selected from molybdenum, tungsten, rhenium, ruthenium, osmium, rhodium, iridium, palladium, platinum, silver, gold or europium.
14. Organic electroluminescent device according to one or more of Claims 1 to 13, characterised in that the degree of doping of the phosphorescent emitter in the matrix is 0.5 to 50%.
15. Organic electroluminescent device according to one or more of Claims 1 to 14, characterised in that the glass transition temperature T_g of the matrix material is greater than 100°C.
16. Organic electroluminescent device according to one or more of Claims 1 to 15, characterised in that the matrix material has an absorbance of less than 0.2 in the visible spectral region between 380 nm and 750 nm at a film thickness of 30 nm.

17. Organic electroluminescent device according to one or more of Claims 1 to 16, characterised in that the lowest triplet energy of the matrix material is between 2 and 4 eV.
18. Organic electroluminescent device according to one or more of Claims 1 to 17, characterised in that the matrix material is an electron-conducting compound.
19. Organic electroluminescent device according to Claim 18, characterised in that the matrix material exhibits predominantly reversible reduction or forms predominantly stable free-radical anions.
20. Organic electroluminescent device according to one or more of Claims 1 to 19, characterised in that the electron mobility of the matrix material is between 10^{-10} and $1 \text{ cm}^2/\text{V}\cdot\text{s}$.
21. Organic electroluminescent device according to one or more of Claims 1 to 20, characterised in that the matrix material is selected from the classes of ketones, imines, phosphine oxides, phosphine sulfides, phosphine selenides, phosphazenes, sulfones and sulfoxides, preferably with aromatic substituents.
22. Organic electroluminescent device according to Claim 21, characterised in that the matrix materials are selected from the classes of ketones, phosphine oxides and sulfoxides.
23. Organic electroluminescent device according to one or more of Claims 1 to 22, characterised in that one or more layers are coated by a sublimation process.
24. Organic electroluminescent device according to one or more of Claims 1 to 22, characterised in that one or more layers are coated by the organic vapour phase deposition (OVPD) process or with the aid of carrier-gas sublimation.
25. Organic electroluminescent device according to one or more of Claims 1 to 22, characterised in that one or more layers are coated by the LITI (light induced thermal imaging) process.

26. Organic solar cell, characterised in that the structure corresponds to one or more of Claims 1 to 25.
27. Organic laser diode, characterised in that the structure corresponds to one or more of Claims 1 to 25.